



Building Trails and Friendships

Lab Employees Make a Positive Difference in Anthony Chabot Regional Park



By Patrick Beck

We just finished our 2011 trail building season in California state and regional parks. We typically have 6 weekend projects between May and October from Napa to Big Sur to Brushy Peak to San Francisco. Without the help of groups like Volunteers for Outdoor California (www.v-o-cal.org), it is no longer possible for parks in California to maintain their trails, let alone build new ones. This is not just a reflection of temporary budget cuts. This is the new normal. We work with agencies in the region to put on large trail projects, where we typically build new trails or perform heavy maintenance. This year we had 14 lab employees donating their time and strength (with at least 2 current and 2 past Lab postdocs representing).

We completed our last project of the year in October at Anthony Chabot Regional Park, a lovely area in the East Bay hills above Oakland, San Leandro

and Castro Valley. We had 100 volunteers on Saturday and about 50 on Sunday that came out for this project. We performed major maintenance on two much loved trails out of Bort Meadow: Ranch Trail and Buckeye Trail. The work involved removing intense overgrowth, improving tread, creating drainage to combat erosion, and much needed trail widening in some places (with less than a foot of very outsloped trail and a 10 foot drop into the creek). A professional chef spent all day preparing a great dinner and dessert for Saturday evening, we enjoyed our usual keg of beer and an assortment of wines, and many of us slept over in beautiful Bort Meadow.

A number of the volunteers at the Chabot Park project were LLNL employees. Shown here from left to right are Jeff Powers, Sarah Powers, David Strozzi (former postdoc), Caleb Mattoon, Patrick Beck, William (Tripp) Floyd (current postdoc), and Craig Fish.

Job Resources

careers.llnl.gov Official LLNL jobs site.

Psi-K Network www.psi-k.org

Electronic structure theory news, events, jobs

brightrecruits.com (from the Institute of Physics)

A range of opportunities in physics & engineering.

APS Careers in Physics www.aps.org/careers

Gateway to physics jobs and careers.

Naturejobs www.nature.com/naturejobs

Hot jobs & career guidance for scientists since 1999.

Science Careers sciencecareers.sciencemag.org

Jobs & advice from the journal Science and the American Association for the Advancement of Science.

www.postdocjobs.com

Hundreds of listings for postdocs, research associates, and other jobs that require a doctoral degree.

Academic Keys www.academickeys.com

Jobs such as professor & university research scientist.

Professional & Career Development

Six Techniques for Presenting Data. Hans Rosling gives excellent and inspiring talks on global development at TED and elsewhere. How does he do it? He gets to the point and focuses on the data. His style:

1. Explain the data axes
2. Highlight subsets of data
3. Dig deeper to unwrap data
4. Place labels close to data points
5. Answer the “Why?” questions
6. Complement data with energetic delivery

Read more:

sixminutes.dlugan.com/six-simple-techniques-for-presenting-data-hans-rosling-ted-2006/

Hans Rosling in action at TED.



Next Steps: Interviews with Former Postdocs

Sean Ford transitioned to a staff position at LLNL.

Where do you work now?

I work in the ground-based Nuclear Explosion Monitoring Group in the Atmospheric, Earth, and Energy Division of the Physical and Life Sciences Directorate. We use seismology to monitor nuclear explosions. This is the same group that I worked with as a post-doc and I'm doing pretty much the same work.

Did you apply elsewhere?

No, I really enjoy the work and the group. I had worked with the group as a graduate student, so I knew them and the type of work that was done well before the initiation of the Post-doc. As far as I was concerned, I couldn't convert to a flex-term fast enough.

Why did you make this choice?

I really like the idea of work in the national interest as well as the combination of academic and industry influences at the Lab.

What did you enjoy most & least as a PD at LLNL?

I loved every minute of my post-doc. The group I work with created the perfect work environment with a balance of self-directed research and collaboration on group-defined projects. The main difficulty was the commute. I live in SF so that my wife can be close to her work and 2 hours in a car every day [is a lot].

How far along in your postdoc were you when you decided what the next step in your career would be?

Since I had worked with the group as a graduate student I knew what I was getting myself into when I started at

the Lab. I knew from the day I started as a post-doc that I wanted to convert to a [staff] position.

Can you describe the application and interview process?

My group leader let me know that a position was being posted and I applied the same day. I knew the interview process because I had seen it in action for other hires within our group, so I was very comfortable with how it all worked — a seminar and then a series of meetings with group members and supervisors. **Editor's note: not all conversions require applications & interviews.**

What do you think your employer valued the most in your formation and experience?

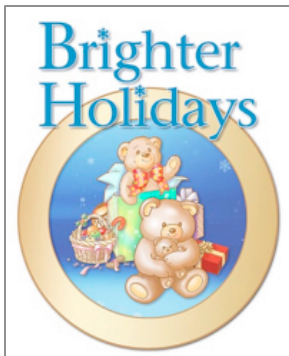
They were looking for someone that had studied seismic sources and I had done some work on explosion/earthquake discrimination as part of my graduate work, which I expanded on as a post-doc. Also, they knew me and I knew them and I think that made things more comfortable during the whole process.

Any advice for PDs at LLNL?

At the beginning of the 2nd year answer the question of where you want to work in the future. If the answer is LLNL, then broaden your contacts and collaboration as far as you can. Learn about the agency or agencies funding your research. Start to make contributions to programmatic objectives as well as your Post-doc funded research. Tell your supervisor of your intentions and ask for guidance or seek it out. If the answer is not LLNL, then stay visible in your community and make sure your research is published and well-communicated.

Help the Needy With Brighter Holidays

The Postdoc Association is providing clothing, household supplies, and holiday gifts to a needy family of five in Livermore. Contact Lance Simms to donate or help with the shopping (simms8@llnl.gov).



Upcoming Events

Postdoc Lunch — hosted by Nathan Kugland

Sansar Indian Restaurant, 2220 1st Street, Livermore
Thursday, December 8, 12:15 PM

Physics & Life Sciences Seminar

"Design of a High-Gain, High Yield Heavy-Ion-Fusion IFE target," Enrique Henestroza, LBNL

Thursday, Dec. 8, 2:00 – 3:00 PM, B481 R1000/Auditorium

Postdoc Holiday Party — hosted by Andre Schleife

Sanctuary Ultra Lounge, 2369 1st Street, Livermore
Friday, December 9, starting at 5:30 PM

Physics & Life Sciences Postdoc Research Seminar

B151 R1209 (Stevenson Room). Refreshments served.

Tuesday, December 20, 11 AM

Tomas Oppelstrup

CMMD

Ate Visser

Physics

Postdoc Lunch at Melo's Pizza on November 10



We had 13 PDs in attendance! Thanks to Jessica Sanders, Andre Schleife, Chris Plechaty, Eric Wang, Jeremy Mason, Charles Reid, Matthew Levy, Liz Withey, Andrea Kritcher, Nathan Kugland, Mark Rosin, Krystle Catalli, and Nick Be for participating.

Our next lunch is scheduled for 12:15 PM on Thursday, December 8th at Sansar Indian Restaurant in downtown Livermore. See you there!

Postdoc-Related Highlights from Notes to the Director

LLNL's geothermal work highlighted in Oregon newspaper

Geothermal research, including the development of new technologies at the Newberry National Volcanic Monument south of Bend, Oregon, is highlighted in the November 6 issue of *The Bulletin*, a central Oregon newspaper. The photograph accompanying the article shows LLNL's Dennise Templeton and Jingbo Wang installing seismic sensors on the slopes of the Newberry volcano. The latest research has unveiled geothermal's potential, but harvesting this green energy isn't without risks, including the possibility of triggering seismic activity – meaning earthquakes. LLNL's project, led by Dennise Templeton, is funded by DOE/Office of Energy Efficiency and Renewable Energy and is focused on detecting and mapping micro-earthquake locations induced by enhanced geothermal system operations in near real-time using empirical and model-based techniques.



Selected Recent Research Publications by LLNL Postdocs

Bold = LLNL Postdoc. We have received many contributions and will steadily publish them all over the next several newsletters. Broadcast your achievements here! Make new connections & help us see well we are doing collectively. **Guidelines:** 1) Peer-reviewed publications only, no manuscripts in progress; 2) Your affiliation must be LLNL; 3) Note which authors are LLNL postdocs, and in what division & group; 4) Send the full citation including title to Cedric (rochaleao1@llnl.gov).

AEED/Computational Geosciences Group: **J.A. White** and R.I. Borja, "Block-preconditioned Newton-Krylov solvers for fully coupled flow and geomechanics," *Computational Geosciences*, 15, 647-659 (2011). .

Computation/CASC: Adam Moody, Greg Bronevetsky, **Kathryn Mohror**, Bronis R. de Supinski, "Design, Modeling, and Evaluation of a Scalable Multi-level Checkpointing System," *Supercomputing 2010*, New Orleans, LA, November 2010.

Engineering Technologies Division: **Mihail Bora**, Benjamin J. Fasenfest, Elaine M. Behymer, Allan S-P Chang, Hoang T. Nguyen, Jerald A. Britten, Cindy C. Larson, James W. Chan, Robin R. Miles and Tiziana C. Bond, "Plasmon Resonant Cavities in Vertical Nanowire Arrays," *Nano Lett.*, 2010, 10 (8), pp 2832-2837

National Ignition Facility/Plasma Physics Group: **Ross, J. S.**, Divol, L, Sorce, C, Froula, D. H, Glenzer, S. H., "Ultraviolet Thomson scattering measurements of the electron and ion features with an energetic 263 nm probe," *JINST* (2011) vol. 6 pp. P08004

National Ignition Facility/Plasma Physics Group: P. Neumayer, C. Fortmann, T. Doeppner, P. Davis, R.W. Falcone, **A. L. Kritcher**, O. L. Landen, H. J. Lee, R.W. Lee, C. Niemann, S. Le Pape, and S. H. Glenzer, "Plasmons in Strongly Coupled Shock-Compressed Matter," *Phys. Rev. Lett.*, 105, 075003 (2010).

National Ignition Facility/Plasma Physics Group: Pollock B. B, Clayton, C. E, Ralph, J. E, Albert, F, Davidson, A, Divol, L, Filip, C, Glenzer, S. H, Herpoldt, K, Lu, W, Marsh, K. A, Meinecke, J, Mori, W. B, Pak, A, Resink, T. C, **Ross, J. S.**, Shaw, J, Tynan, G. R, Joshi, C, Froula, D. H. "Demonstration of a Narrow Energy Spread, similar to 0.5 GeV Electron Beam from a Two-Stage Laser Wakefield Accelerator," *Phys Rev Lett* (2011) vol. 107 (4) pp. 045001

National Security Engineering: **Christian R Scullard**, "Polynomial sequences for bond percolation critical thresholds," *J. Stat. Mech.* (2011) P09022

NSD/SIAS: Mingxuan Sun, Guy Lebanon, **Paul Kidwell**, "Estimating Probabilities in Recommendation Systems," *Proc. of the 14th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2011.

PLS/CMMD/Quantum Simulations Group: **Cedric Rocha Leao** and Vince Lordi, "Ab Initio guided optimization of GaTe for Radiation Detection Applications," *Phys Rev B* 84, 165206 (2011)

PLS/CMMD: Authors: Måns Elenius, **Tomas Oppelstrup**, and Mikhail Dzugutov, "Evidence for a simple monatomic ideal glass former: The thermodynamic glass transition from a stable liquid phase," *Journal of Chemical Physics* 133, 174502 (2010)

PLS/CMMD: A. Caro, J. Hetherly, **A. Stukowski**, M. Caro, E. Martinez, S. Srivilliputhur, L. Zepeda-Ruiz, M. Nastasi "Properties of Helium bubbles in Fe and FeCr alloys," *Journal of Nuclear Materials* 418 (2011) 261-268

PLS/CMMD/Quantum Simulations Group: **A. M. Teweldeberhan** and S. A. Bonev, "Structural and thermodynamic properties of liquid Na-Li and Ca-Li alloys at high pressure," *Phys. Rev. B* 83, 134120 (2011)

PLS/CSD: **Mehl, M.**; Pitz, W. J.; Westbrook, C. K.; Curran, H. J.; "Kinetic modeling of gasoline surrogate components and mixtures under engine conditions," *PROCEEDINGS OF THE COMBUSTION INSTITUTE*; 33; p 193-200; 2011

Selected Recent Research Publications by LLNL Postdocs, Continued

PLS/CSD: **Mayer, B. P.; Lewicki, J. P.**; Weisgraber, T. H.; Small, W.; Chinn, S. C.; Maxwell, R. S. "Linking Network Microstructure to Macroscopic Properties of Siloxane Elastomers Using Combined Nuclear Magnetic Resonance and Mesoscale Computational Modeling," *Macromolecules*, 2011, DOI:10.1021/ma2019039.

PLS/Physics: **L. Simms**, "Autonomous Sub-Pixel Satellite Track Endpoint Determination for Space-Based Images," *Applied Optics*, 50, 22, D1-D6, 2011

PLS/Experimental Nuclear Physics: N. Renard-Le Galloudec, J. Cobble, **S. L. Nelson**, A. Merwin, Y. Paudel, I. Shrestha, G. C. Osborne, K. M. Williamson, V. L. Kantsyrev, "Advantages of a soft protective layer for good signal-to-noise ratio proton radiographs in high debris environments," *High Energy Density Phys.* 7, 247-251 (2011).

PLS/Physics/Optical Sciences Group: Guyon, O.; Bendek, E., **Ammons, S.M.**; Milster, T.; Belikov, R.; Shaklan, S.; Shao, M.; and Woodruff, R., "Diffractive pupil telescope for high-precision space astrometry," *SPIE*, 8151, 24. 2011,

PLS/Physics/X-ray Science and Technology Group: J. I. Larruquert, F. Frassetto, S. García-Cortés, M. Vidal-Dasilva, **M. Fernández-Perea**, J. A. Aznárez, J. A. Méndez, L. Poletto, A. M. Malvezzi, A. Giglia, S. Nannarone, "Transmittance and optical constants of Er films in the 3.25-1,580 eV spectral range," *Applied Optics*, 50, 2211-2219 (2011).

PLS Proposal Writing Workshop

PLS postdocs have expressed interest in attending proposal writing workshops that are tailored to specific calls. The next one is scheduled for Dec. 14th from 10-11:30 and will focus on the UC Fee RFP and will be put on by the OSO, specifically Zelda Laskowsky and Christine Hartmann. There will also be a workshop in the February time frame to work on LDRD proposals. If you are in PLS and are interested, please contact Camille Vandermeer (Vandermeer1@llnl.gov). If you are not in PLS and are interested in this type of workshop then please contact the postdoc director in your Directorate.

Meet the Postdoc Association Leadership Council

Postdoc Handbook editor works on signal processing and analysis methods for streaming data



My name is Mandoye and I am a postdoc in the Informatics Group within the Center for Applied Scientific Computing. I am presently working on signal processing methods for analyzing streaming data. The objective is to develop practically implementable algorithms to jointly process in real-time multiple data streams that are noisy, non-stationary and sampled at different rates. Another project that I am involved in concerns the identification and prediction of diurnal patterns in wind power generation time series. Prior to joining the lab, I was an Electrical Engineering PhD student at Purdue University where my research focused on statistical data analysis and sensor signal processing techniques for Intelligent Infrastructure Systems.

A very attractive aspect of the LLNL postdoc experience is the fact that it is midway between academia and industry: It is a well-suited environment for gaining valuable research experience while deciding between careers in academia or research laboratories. After meeting some LLPA council members a couple of months ago, I decided to join the team and help out a bit by taking on the role of the handbook editor.

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